

REMARKS

We have added claim 20 which includes an element of a control circuit that enables the power supply circuit when the image sensor stops generating image sensor output signals.

Prior Art Rejections

Claims 1-7 and 9-11 were rejected as being anticipated Rhodes (US Patent No. 6,140,630).

Independent Claim 1

We submit that Rhodes does not disclose an apparatus for driving a CCD image sensor including a drive circuit for supplying a pulse signal to the CCD image sensor, as recited in independent claim 1. Rhodes describes an active pixel array including charge pumps (300, 301, 303, 304) that enhance the performance of transistors by providing a voltage $V_{DD} + V_{th}$ to the gate of the select transistor 38, the gate of the reset transistor 31, the gate 28 of the transfer transistor 29, and the photogate 24 to overdrive those transistors.

In the office action (see page 2), the Examiner references Rhodes' photo detector circuit 14 or his reset gate 32 as corresponding to a drive circuit. These elements are transistors, which are turned on and off in accordance with a voltage from the charge pumps. However, they do not provide a pulse signal to the CCD image sensor as is required by independent claim 1.

We also submit that Rhodes does not disclose a power supply circuit including an over-boosting circuit for temporarily over-boosting the voltage supplied to the drive circuit to generate an over-boosted voltage exceeding a target control voltage for a predetermined time, prior to the charge transfer operation of the CCD image sensor, as recited in independent claim 1. Rhodes' charge pumps are operated to always overdrive his transistors to enhance the performance of transistors. But, Rhodes' charge pumps do not generate an over-boosted voltage, prior to the charge transfer operation of the CCD image sensor as is required by independent claim 1. For these reasons alone, we submit that independent claim 1 is patentably distinct from Rhodes.

Because claims 2-6 depend from independent claim 1, these claims are patentable for at least the same reasons that claim 1 is patentable.

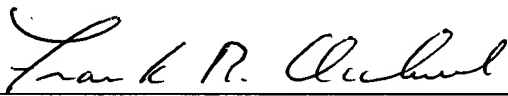
Independent Claim 7

We submit that Rhodes does not disclose an apparatus for driving a CCD image sensor including a power supply circuit that is enabled when the image sensor stops generating image sensor output signals, as is required by independent claim 7. Page 11, line 30 to page 12, line 7 and Figs 4a and 4b of applicant's specification describes one embodiment of such an apparatus. For this reason alone, we submit that independent claim 7 is patentably distinct from Rhodes. Because claims 9-11 depend from independent claim 7, these claims are patentable for at least the same reasons that claim 7 is patentable.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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